

What is claimed is:

1. A method of inhibiting the deleterious effects on mammalian skin tissue by radiation treatment therapy comprising administering to a patient in need thereof, in conjunction with exposure of the skin tissue to radiation, a safe and effective amount of a chelating agent.
2. The method of claim 1 wherein said chelating agent is applied topically to said patient.
3. The method of claim 1 wherein said chelating agent is administered orally or intravenously to said patient.
4. The method of claim 1 wherein the chelating agent is an aromatic amine, carbonyl compound, oximate, amine, carboxylate, alkoxide, enolate, phenoxide, catecholate, hydroxy acid, hydroxamate, ketoenolate, mercaptide, hydroxy aromatic amine, aromatic hydroxy acid, polyphosphate or a mixture thereof.
5. The method of claim 1 wherein the chelating agent is 2,2'-dipyridylamine; 1,10-phenanthroline; di-2-pyridylketone; 2-furildioxime; 2-furilmonoxime; 2,3-bis(2-pyridyl)pyrazine; 1-hydroxy-4-methyl-6-(2,4,4-trimethylpentyl)-2(1H)-pyridone; 2,3-dihydroxybenzoic acid; ethylenediamine-N,N-bis(2-hydroxyphenylacetic acid), dimethyl ester; 1,1'-carbonyldiimidazole; 1,2-dimethyl-3-hydroxypyrid-4-one; 2,4,6-tri(2-pyridyl)-1,3,5-triazine; 1-pyrrolidinecarbodithioic acid; diethyldithiocarbamic acid; 6-cyclohexyl-1-hydroxy-4-methyl-2(1H)-pyridinone; 2,2'-dipyridyl; 1,2-cyclohexanedione dioxime; 3-hydroxy-2-methyl-4-pyrone; 2,3-bis(2-pyridyl)-5,6-dihydropyrazine; 3-(4-phenyl-2-pyridyl)-5-phenyl-1,2,4-triazine; 5-hydroxy-2-(hydroxymethyl)-4H-pyran-4-one; 2,3-dihydroxypyridine; 2,2'-biquinoline; 2,2'-bipyrazine; 3-(2-pyridyl)-5,6-diphenyl-1,2,4-triazine; 4,4'-dimethyl-2,2'-dipyridyl; 4,5-dihydroxy-1,3-benzene-disulfonic acid; phenyl 2-

pyridyl ketoxime; desferrioxamine B; 5,7-dichloro-8-hydroxyquinoline; 2,3-dihydroxynaphthalene; 2,3,5,6-tetrakis-(2'-pyridyl)pyrazine; 2,4-bis(5,6-diphenyl-1,2,4-triazine-3-yl)pyridine; di-2-pyridyl glyoxal; 2-(2-pyridyl)benzimidazole; 6-hydroxy-2-phenyl-3(2H)-pyridazinone; 2,4-pteridinediol; 3-(4-phenyl-2-pyridyl)-5,6-diphenyl-1,2,4-triazine; N-benzoyl-N-phenylhydroxylamine; 3-amino-5,6-dimethyl-1,2,4-triazine; 2,6-pyridinedicarboxylic acid; 2,4,5-trihydroxypyrimidine; 4-(2-amino-1-hydroxyethyl)-1,2-benzenediol; 3-hydroxy-5-(hydroxymethyl)-2-methyl-4-pyridine-carboxylic acid, phytic acid or mixtures thereof, including analogs, homologs or isomers of said chelating agents which themselves are chelating agents.

6. The method of claim 2 wherein from about 0.001 mg/cm² to about 1.0 mg/cm² of the chelating agent is applied to the skin.

7. The method of claim 2 wherein from about 0.01 mg/cm² to about 0.5 mg/cm² of the chelating agent is applied to skin.

8. The method of claim 2 wherein a safe and radioprotectively effective amount of an anti-inflammatory agent is also applied to the skin.

9. The method of claim 2 wherein a safe and radio-protectively effective amount of a radical scavenging compound is also applied to the skin.

10. A composition protective against damage to mammalian skin tissue by radiation treatment comprising:

- (a) a safe and radioprotectively effective amount of a chelating agent; and
- (b) a safe and effective amount of a carrier therefore.

11. A composition according to claim 10 adapted for topical application.

12. A composition according to claim 10 adapted for oral or intravenous administration.

13. The composition of claim 10 wherein said chelating agent is 2,2'-dipyridylamine; 1,10-phenanthroline; di-2-pyridylketone; 2-furildioxime; 2-furilmonoxime; 2,3-bis(2-pyridyl)pyrazine; 2,3-dihydroxybenzoic acid; ethylenediamine-N,N-bis(2-hydroxyphenylacetic acid), dimethyl ester; 1,1'-carbonyldiimidazole; 2,4,6-tri(2-pyridyl)-1,3,5-triazine; 2,2'-dipyridyl; 1,2-cyclohexanedione dioxime; 3-hydroxy-2-methyl-4-pyrone; 2,3-bis(2-pyridyl)-5,6-dihydropyrazine; 3-(4-phenyl-2-pyridyl)-5-phenyl-1,2,4-triazine; 2,3-dihydroxypyridine; 2,2'-biquinoline; 2,2'-bipyrazine; 3-(2-pyridyl)-5,6-diphenyl-1,2,4-triazine; 4,4'-dimethyl-2,2'-dipyridyl; 4,5-dihydroxy-1,3-benzene-disulfonic acid; phenyl 2-pyridyl ketoxime; desferrioxamine B; 5,7-dichloro-8-hydroxyquinoline; 2,3-dihydroxynaphthalene; 2,3,5,6-tetrakis-(2'-pyridyl)pyrazine; 2,4-bis(5,6-diphenyl-1,2,4-triazine-3-yl)pyridine; di-2-pyridyl glyoxal; 6-hydroxy-2-phenyl-3(2H)-pyridazinone; 2,4-pteridinediol; 3-(4-phenyl-2-pyridyl)-5,6-diphenyl-1,2,4-triazine; N-benzoyl-N-phenylhydroxylamine; 3-amino-5,6-dimethyl-1,2,4-triazine; 2,4,5-trihydroxypyrimidine; 4-(2-amino-1-hydroxyethyl)-1,2-benzenediol or mixtures thereof.

14. The composition of claim 10 wherein said chelating agent is 2,2'-dipyridylamine; 1,10-phenanthroline; di-2-pyridylketone; 2-furildioxime; 2-furilmonoxime; 2,3-bis(2-pyridyl) pyrazine; 2,3-dihydroxybenzoic acid; ethylenediamine-N,N-bis-(2-hydroxyphenylacetic acid) dimethyl ester; 1,1'-carbonyldiimidazole; 2,4,6-tri(2-pyridyl)-1,3,5-triazine or mixtures thereof.

15. The composition of claim 10 wherein said chelating agent is 2,2'-dipyridylamine; 1,10-phenanthroline; di-2-pyridylketone; 2-furildioxime; 2-furilmonoxime; 2,3-bis(2-pyridyl) pyrazine; [1-hydroxy-4-methyl-6-(2,4,4-trimethylpentyl)2(1H)-pyridone;] 2,3-dihydroxybenzoic acid; ethylenediamine-N,N-bis-(2-hydroxyphenylacetic acid), dimethyl ester, phytic acid or mixtures thereof.

16. The composition of claim 10 wherein the chelating agent is 2-furildioxime.

17. The composition of claim 10 which comprises from about 0.01% to about 10% of the chelating agent.

18. The composition of claim 10 which additionally comprises a safe and radioprotectively effective amount of an anti-inflammatory agent.

19. The composition of claim 10 which additionally comprises a safe and radioprotectively effective amount of a radical scavenging compound.

20. An article of manufacture comprising packaging material and a chelating agent contained within said packaging material, wherein said chelating agent is effective for inhibiting the deleterious effects of radiation treatment therapy on mammalian skin tissue, and wherein said packaging material comprises a label which indicates that said chelating agent can be used for protecting against the deleterious effects of radiation treatment therapy on the skin.

21. An article of manufacture according to claim 20 wherein said chelating agent is 2,2'-dipyridylamine; 1,10-phenanthroline; di-2-pyridylketone; 2-furildioxime; 2-furilmonoxime; 2,3-bis(2-pyridyl)pyrazine; 2,3-dihydroxybenzoic acid; ethylenediamine-N,N-bis(2-hydroxyphenylacetic acid), dimethyl ester; 1,1'-carbonyldiimidazole; 2,4,6-tri(2-pyridyl)-1,3,5-triazine; 2,2'-dipyridyl; 1,2-cyclohexanedione dioxime; 3-hydroxy-2-methyl-4-pyrone; 2,3-bis(2-pyridyl)-5,6-dihydropyrazine; 3-(4-phenyl-2-pyridyl)-5-phenyl-1,2,4-triazine; 2,3-dihydroxypyridine; 2,2'-biquinoline; 2,2'-bipyrazine; 3-(2-pyridyl)-5,6-diphenyl-1,2,4-triazine; 4,4'-dimethyl-2,2'-dipyridyl; 4,5-dihydroxy-1,3-benzene-disulfonic acid; phenyl 2-pyridyl ketoxime; desferrioxamine B; 5,7-dichloro-8-hydroxyquinoline; 2,3-dihydroxynaphthalene; 2,3,5,6-tetrakis-(2'-pyridyl)pyrazine; 2,4-bis(5,6-diphenyl-1,2,4-triazine-3-yl)pyridine; di-2-pyridyl glyoxal; 6-hydroxy-2-phenyl-3(2H)-pyridazinone; 2,4-pteridinediol; 3-(4-phenyl-2-pyridyl)-5,6-diphenyl-1,2,4-triazine; N-benzoyl-N-phenyl-

hydroxylamine; 3-amino-5,6-dimethyl-1,2,4-triazine; 2,4,5-trihydroxypyrimidine; 4-(2-amino-1-hydroxyethyl)-1,2-benzenediol or mixtures thereof.

22. An article of manufacture according to claim 20 wherein said chelating agent is 2,2'-dipyridylamine; 1,10-phenanthroline; di-2-pyridylketone; 2-furildioxime; 2-furilmonoxime; 2,3-bis(2-pyridyl) pyrazine; 2,3-dihydroxybenzoic acid; ethylenediamine-N,N-bis-(2-hydroxyphenylacetic acid) dimethyl ester; 1,1'-carbonyldiimidazole; 2,4,6-tri(2-pyridyl)-1,3,5-triazine or mixtures thereof.

23. An article of manufacture according to claim 20 wherein said chelating agent is 2,2'-dipyridylamine; 1,10-phenanthroline; di-2-pyridylketone; 2-furildioxime; 2-furilmonoxime; 2,3-bis(2-pyridyl) pyrazine; [1-hydroxy-4-methyl-6-(2,4,4-trimethylpentyl)2(1H)-pyridone;] 2,3-dihydroxybenzoic acid; ethylenediamine-N,N-bis-(2-hydroxyphenylacetic acid), dimethyl ester, phytic acid or mixtures thereof.

24. An article of manufacture according to claim 20 wherein the chelating agent is 2-furildioxime.

25. An article of manufacture according to claim 20 which additionally comprises a safe and radioprotectively effective amount of an anti-inflammatory agent.

26. An article of manufacture according to claim 20 which additionally comprises a safe and radioprotectively effective amount of a radical scavenging compound.

27. An article of manufacture according to claim 20 wherein said label indicates that said chelating agent may be administered topically.

28. An article of manufacture according to claim 20 wherein said label indicates that said chelating agent may be administered orally or intravenously.